

Teachers'  
JUL 1990 Retirement System,  
1990 State of Montana  
actuarial  
evaluation as of  
July 1



S  
351.5  
Titrsav  
1990

**Teachers' Retirement System**

**State of Montana**

**Actuarial Information Required Under GASB #5**

**As of June 30, 1990**

STATE DOCUMENTS COLLECTION

OCT 1 1992

MONTANA STATE LIBRARY  
1515 E. 6TH AVE.  
HELENA, MONTANA 59601

**Hendrickson, Miller  
& Associates, Inc.**  
ACTUARIAL CONSULTANTS



## Table of Contents

	Page
<b>Introduction</b>	1
<b>Section A - Plan Description</b>	2
<b>Section B - Related Party Disclosures</b>	3
<b>Section C - Funding Status and Progress</b>	4
<b>Section D - Actuarially Determined Contribution Requirements and Contributions Made</b>	6
<b>Section E - Trend Information</b>	8
<b>Appendix - Summary of Benefit Provisions</b>	9



### Introduction

This report presents actuarial information required under Statement No. 5 of the Government Accounting Standards Board as of June 30, 1990. The results presented in this report were determined in accordance with generally accepted actuarial principles and techniques, and are in compliance with our understanding of GASB #5.



Alton P. Hendrickson

Member, American Academy of  
Actuaries



## Section A

### Plan Description

1.	A.	Covered Payroll	\$396,235,432
	B.	Total Payroll	\$396,235,432
2. As of June 30, 1990, statewide membership in the Teachers' Retirement System consisted of:			
		Retirees and Beneficiaries Currently Receiving Benefits	6,558
		Terminated Employees Entitled to But Not Yet Receiving Benefits	<u>5,217</u>
		Total Inactives	11,775
Current Employees:			
		Vested	10,457
		Not Vested	<u>5,245</u>
		Total Current Employees	15,702
		Total Membership	27,477

A summary of benefit provisions is attached as Appendix 1. A detailed summary of membership is attached as Appendix 2.

3. Benefit and contribution provisions are established by state law and may be amended only by the State of Montana legislature.



## Section B

### Related Party Disclosures

Hendrickson, Miller & Associates, Inc. is under contract with the Teachers' Retirement System to provide actuarial and consulting services with regard to the retirement plan.



## Section C

### Funding Status and Progress

1. The last actuarial valuation of this system was performed as of July 1, 1989.
2. An actuarial update has been prepared as of June 30, 1990, based on membership data provided by the system as of that date.
3. The following assumptions were used in calculation of the pension benefit obligation:

Rate of Return on Investment of Present and Future Assets - 8%  
Projected Salary Increases - Inflation - 6.5%  
Projected Salary Increases - Merit - None  
Changes in Post-Retirement Benefit - None

The assumptions used in these calculations are the same as the assumptions stated in the report on the actuarial valuation of the Teachers' Retirement System as of July 1, 1989.



4. Actuarial Present Value of Projected Benefits:

Inactives:

Retirees and beneficiaries	\$475,652,160
Other terminated employees	<u>26,815,778</u>
Total inactives	\$502,467,938

Current employees:

Accumulated employee contributions	\$340,092,144
Employer financed vested	359,965,494
Employer financed nonvested	<u>4,266,434</u>
Total current employees	<u>\$704,324,072</u>
Total Pension Benefit Obligation	\$1,206,792,010

Net Assets Available for Benefits:

Cost	\$689,225,147
Market	\$781,753,373
Total Unfunded Pension Benefit Obligation	\$517,566,863

There were no changes in the actuarial assumptions or benefit provisions during the past year.



## Section D

### Actuarially Determined Contribution Requirements and Contributions Made

The TRS funding policy provides for periodic employer and employee contributions at rates specified by state law. The contribution requirement is not actuarially determined; however, an actuary does determine the actuarial implications of the funding requirement in a biennial actuarial valuation. The actuarial method used to determine the implications of the statutory funding level is the entry age normal funding method, with both normal cost and amortization of the unfunded accrued liability determined as a level percentage of payroll.

Contributions to the system for the year ending June 30, 1990 were as follows:

	<u>Amount</u>	<u>Statutory % of Compensation</u>
Employer		
Regular	\$30,216,214	7.626%
TIAA-CREF	430,214	.108%
Employee	<u>30,549,466</u>	<u>7.710%</u>
Total	\$61,195,894	15.444%



The amount of employee contributions shown above includes payments for the purchase of past service credit, in addition to the statutory 7.044% employee contribution.

These contributions are applied as follows:

	<u>Amount</u>	<u>% of Compensation</u>
Normal Cost	\$34,975,702	8.827%
Amortization of Unfunded Liability	<u>26,220,192</u>	<u>6.617</u>
Total	\$61,195,894	15.444%

During the past year, no changes were made in the method used to calculate or establish contribution requirements. Changes in the law affecting benefits are described in Section C.



## Section E

### Trend Information

	<u>As of June 30</u>		
	<u>1990</u>	<u>1989</u>	<u>1988</u>
Net assets available for benefits as % of PBO	57.1%	56.4%	56.2%
Unfunded PBO as % of annual covered payroll	130.6%	133.2%	128.6%
Employer contributions as % of annual covered payroll	7.734%	7.428%	7.428%
Employer contributions have been made according to state law, and have been determined to be adequate for funding of the system by biennial actuarial valuations, as described in Section D.			



## Appendix 1

### Summary of Benefit Provisions

Effective Date	September 1, 1937
Vesting Period	5 years. No benefits are payable unless the member has a vested right, except the return of employee contributions with interest.
Final Compensation	Average of highest 3 consecutive years of earned compensation.
Normal Form of Benefits	Life only annuity. All benefits cease upon death; however, in no event will the member receive less than the amount of employee contributions with interest.
Normal Retirement Benefits	
Eligibility:	25 years of service or age 60.
Benefit:	The retirement benefit is equal to 1/60 of final compensation for each year of service.
Early Retirement Benefits	
Eligibility:	5 years of service and age 50.



**Benefit:** The retirement benefit is calculated in the same manner as described for normal retirement, but the benefit is reduced 1/2 of 1% for each of the first 60 months early and 3/10 of 1% for each of the next 60 months early.

#### Death Benefits

**Eligibility:** 5 years of service.

**Benefit:** The death benefit is equal to 1/60 of final compensation for each year of service accrued at date of death with an actuarial adjustment based on the relation of the member's age at death to the beneficiary's age. A monthly benefit of \$200 is paid to each child until age 18. In addition, a lump sum benefit of \$500 is paid upon the death of an active or retired member.

#### Disability Benefits

**Eligibility:** 5 years of service.

**Benefit:** The disability benefit is equal to 1/60 of final compensation for each year of service accrued at date of disability. The minimum benefit is 1/4 of the final compensation.



Withdrawal Benefits	With less than 5 years of service, the accumulated employee contributions with interest are returned. With more than 5 years, the member may elect a refund of contributions with interest, or may leave the contributions and interest and retain a vested right to retirement benefits.
Tax Sheltered Annuity	The Teachers' Retirement System sponsors a tax-deferred annuity program for the benefit of its members. The policies of this program have been established in accordance with the guidelines set by the Internal Revenue Service. The benefits provided by this program are determined solely by the value of the member's account (voluntary contributions plus interest) using actuarial tables provided by the Retirement Board.
Contributions	Employee: 7.044% of compensation Employer: 7.459% of compensation



Appendix 2

Table 1

Number of Full-Time Members

Years of Service	20-25	25-29	30-34	35-39	40-44	45-49	50-54	55-59	OVER 60	Total	
0-4	242	666	599	577	510	227	112	46	22	3001	
5-9	4	282	718	610	523	301	107	53	18	2616	
10-14			243	765	594	345	168	69	39	2223	
15-19				388	950	431	215	116	42	2142	
20-24					378	763	349	164	71	1725	
25-29						1	216	339	147	61	764
30-34							3	103	149	38	293
35-39								34	32	66	
40-UP									1	13	14
TOTAL	246	948	1560	2340	2956	2286	1393	779	336	12844	



Table 2

## Average Salaries of Full-Time Members

Years of Service	20-25	25-29	30-34	35-39	40-44	45-49	50-54	55-59	OVER 60	Total	
0-4	19043	18926	20656	21865	23583	24653	25172	27591	30426	21521	
5-9	23377	21174	23438	25031	26686	27387	29251	32079	29632	25124	
10-14			25955	27660	29374	30652	29193	29291	32728	28651	
15-19				29860	31682	32403	31276	30430	30212	31360	
20-24					33177	33989	34481	33348	33898	33846	
25-29					24865	34829	35346	37157	33568	35393	
30-34						30139	35310	37106	35619	36211	
35-39								36542	38848	37660	
40-UP									31413	37977	37508
TOTAL	19114	19595	22762	25910	29126	31464	32470	33703	33610	28046	



Table 3

Annual Salaries of Full-Time Members  
In Thousands

Years of Service	20-25	25-29	30-34	35-39	40-44	45-49	50-54	55-59	OVER 60	Total
0-4	4608	12605	12373	12616	12027	5596	2819	1269	669	64584
5-9	94	5971	16829	15269	13957	8243	3130	1700	533	65725
10-14			6307	21160	17448	10575	4904	2021	1276	63692
15-19				11586	30098	13966	6724	3530	1269	67172
20-24					12541	25934	12034	5469	2407	58385
25-29					25	7523	11982	5462	2048	27040
30-34						90	3637	5529	1354	10610
35-39								1242	1243	2486
40-UP								31	494	525
TOTAL	4702	18576	35509	60630	86095	71928	45231	26254	11293	360218



Table 4

## Number of Part-Time Members

Years of Service	20-25	25-29	30-34	35-39	40-44	45-49	50-54	55-59	OVER 60	Total
0-4	177	319	362	498	421	253	117	56	41	2244
5-9		15	89	107	65	43	21	16	6	362
10-14			9	60	43	21	11	11	2	157
15-19				8	35	7	5	8	3	66
20-24					3	6	5	4	3	21
25-29		.					2	1	2	5
30-34								2	1	3
35-39										
40-UP										
TOTAL	177	334	460	673	567	330	161	98	58	2858



Table 5  
Number of Vested Inactive Members

Years of Service	20-25	25-29	30-34	35-39	40-44	45-49	50-54	55-59	OVER 60	Total
0-4										
5-9		14	116	179	135	100	69	65	26	704
10-14			7	55	67	71	46	30	14	290
15-19				3	26	36	25	18	4	112
20-24					2	10	6	6		24
25-29						2			2	4
30-34								2		2
35-39									1	1
40-UP										
TOTAL		14	123	237	230	219	146	121	47	1137



Table 6

## Summary of Retirees

## Number of Members

## Age Group

Under 55	55-59	60-64	65-69	70-74	75-79	80-84	Over 84	Total
358	566	838	990	972	855	755	569	5903

## Total Monthly Benefit

## Age Group

Under 55	55-59	60-64	65-69	70-74	75-79	80-84	Over 84	Total
398986	622737	809290	828986	634156	403226	282758	204517	4184656

## Average Monthly Benefit

## Age Group

Under 55	55-59	60-64	65-69	70-74	75-79	80-84	Over 84	Total
1114	1100	966	837	652	472	375	359	709



Table 7

## Summary of Disabled

## Number of Members

## Age Group

Under 55	55-59	60-64	65-69	70-74	75-79	80-84	Over 84	Total
60	30	44	37	42	29	13	10	265

## Total Monthly Benefit

## Age Group

Under 55	55-59	60-64	65-69	70-74	75-79	80-84	Over 84	Total
33926	18758	25679	19071	17229	11603	4512	3930	134708

## Average Monthly Benefit

## Age Group

Under 55	55-59	60-64	65-69	70-74	75-79	80-84	Over 84	Total
565	625	584	515	410	400	347	393	508



Table 8

## Summary of Survivors

## Number of Members

## Age Group

Under 55	55-59	60-64	65-69	70-74	75-79	80-84	Over 84	Total
134	34	46	44	27	26	15	8	334

## Total Monthly Benefit

## Age Group

Under 55	55-59	60-64	65-69	70-74	75-79	80-84	Over 84	Total
46285	21110	29632	22965	10295	10524	6140	3447	150397

## Average Monthly Benefit

## Age Group

Under 55	55-59	60-64	65-69	70-74	75-79	80-84	Over 84	Total
345	621	644	522	381	405	409	431	450



Table 9  
Summary of Child's Benefit

Number of Members									Age Group
Under 5	5-6	7-8	9-10	11-12	13-14	15-16	Over 17	Total	
0	4	3	5	8	11	15	10	56	

Total Monthly Benefit									Age Group
Under 5	5-6	7-8	9-10	11-12	13-14	15-16	Over 17	Total	
0	800	600	1000	1600	2200	3000	2000	11200	

Average Monthly Benefit									Age Group
Under 5	5-6	7-8	9-10	11-12	13-14	15-16	Over 17	Total	
0	200	200	200	200	200	200	200	200	



000000  
612513  
000000

JIUDI TANG<sup>TM</sup>  
51253  
MADE IN U.S.A.